Commonwealth of Kentucky
Division for Air Quality

PERMIT STATEMENT OF BASIS

Title V draft permit # V-03-044
A. O. Smith Electrical Products Company
636 Holt Drive, Scottsville, Kentucky 42164
June 17, 2004
Monika Kannadaguli, Reviewer
Plant I.D. # 21-003-00007
Application Log # 55876

SOURCE DESCRIPTION

The A. O. Smith Electrical Products Company supplies electric motors to customers in the "Hermetic Motor" compressor industry. The plant also acts as a "feeder plant" for components assembled at other company locations. Products shipped include finished rotor assemblies, finished stator/coil assemblies, and steel motor laminations.

Major manufacturing processes include:
1) stamping and heat-treating (annealing) of steel motor laminations,
2) aluminum die casting, machining, and heat-treating (bluing) of rotors, and
3) assembly/bonding, winding, and varnishing of stator cores.
In addition, the plant has an engineering sample shop to build and test new model designs specified by the engineering departments. New model designs are built in limited quantities and use the products manufactured in the facility as well as some purchased materials.

The manufacture of motor laminations consists of the slitting of semi-processed electrical grade steel and the stamping of stator and rotor laminations. Laminations used for stator cores are heat-treated by an annealing process. The annealing process is conducted in electric-fired furnaces in the presence of a reducing atmosphere. The reducing atmosphere is provided by "Exalene" Generators, which convert a natural gas supply into nitrogen (N_2), Carbon Monoxide (CO), Carbon Dioxide (CO_2), and Hydrogen (H_2). The actual composition of the Exalene Generator output gas is varied by controlling the input air-natural gas mixture.

The manufacture of rotor assemblies consists of stacking and aligning rotor laminations to a specific height, welding the outer diameter, coating the welded core, aluminum die casting the rotor core, boring and turning the cast core, heat-treating (bluing) the cast core, and cleaning, inspecting and packaging the finished rotor for shipment. The rotor heat-treatment process is conducted in electric-fired furnaces, utilizing atmosphere gas provided by "Exalene" Generators (see above description of Exalene Generator).

The manufacture of stator assemblies consists of stator core assembly, core bonding, wind and assembly of copper wire coils, varnish coat and curing of finished windings (Selectreat), and final inspection, packing and shipment of the finished stator assemblies. The primary air emissions from A.

the stator assembly process are Volatile Organic Compounds (VOCs), Glycol Ethers, and natural gas combustion byproducts from bake ovens.

A. O. Smith Electrical Products Company is proposing renewal of their operating Title V permit that will expire on January 15, 2004 with the following modifications:

1.Emissions Unit 03 (18), Mini Selectreat System
Equipments include: preheat oven, mix tank, trickle treat, cure oven, and bake ovens
As per the information provided by the source, this emission unit was shut down and removed from production in August 2002. Permit has been updated to reflect the changes.

2. Emissions Unit 05 (31), Rotor Grinding Process
Equipments include: Center less grinders, coolant feed rate, coolant filtration system, coolant re-circulation pump, and waste bin
As per the information provided by the source, this unit has been reclassified as an insignificant activity. Based on the current and future use of a non-HAP containing lubricant, all the potential emissions are below 5 tons/year.

3. Emissions Unit 08 (8 annealing furnances) and Emissions Unit 020 (Rotor blue furnances)
Earlier these units were classified as insignificant activities in the original Title V application submitted by General Electric (prior to A.O. Smith's acquisition of the facility). However, based on the potential carbon-monoxide (>100 tons/year) from the Exalene Generators associated with these furnances, these units have been reclassified and included more appropriately in the Title V permit.

Additionally, the company has reformulated the application solvent to eliminate formaldehyde and reduce yearly emission of glycol ether and the triehylamine. Modeling done through Screen3 on the reformulated solvents show there will be no adverse impact from the rate of usage in the vicinity of operation.

APPLICABLE REGULATIONS:

401 KAR 59:225, New miscellaneous metal parts and products surface coating operations, applicable to a coating line located at job shops and original equipment manufacturing industries which apply coatings on metal substrates not elsewhere subject to regulation in this chapter.

401 KAR 63:020, Potentially Hazardous material or toxic substances

40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants applies to the Surface Coating facility. Specifically, Regulation 40 CFR 63.3880, Subpart MMMM applies. Pursuant to 40 CFR 63.3883, the applicable requirements under 40 CFR 63, Subpart MMMM shall apply to this existing unit 3 years from January 2, 2004 (i.e., Compliance date is January 2, 2007). The permittee however needs to submit notifications as required by 40 CFR 63.3910.

NON-APPLICABLE REGULATIONS:
Regulations not applicable to emissions units 01(01), 02(05) and 04(23):

The following regulations are not applicable based on the applicability of the regulations, applicability dates, and/or commencement dates:

401 KAR 60:005, NSPS incorporating by reference 40 CFR 60 Subpart EE, Standards of performance for surface coating of metal furniture.

401 KAR 61:060, Existing sources using organic solvents, for unit located in a Priority Region III for photochemical oxidants which commenced before June 29, 1979 but on or after April 9, 1972, due to applicability dates.

401 KAR 61:090, Existing automobile and light-duty truck surface coating operations, due to definition of affected facility. Units are not part of assembly plant.

401 KAR 61:132, Existing miscellaneous metal parts and products surface coating operations, due to applicability date and applicability provisions in Section 2, since Allen County is attainment for ozone pursuant to 401 KAR 51:010.

Regulations not applicable to emissions units 02(05):

Regulation 401 KAR 59:225, New miscellaneous metal parts and products surface coating operations, applicable to a coating line located at job shops and original equipment manufacturing industries which apply coatings on metal substrates not elsewhere subject to regulation in this chapter due to applicability date of the regulation.

COMMENTS:

?? The permittee has not proposed any alternate operating scenario for any of the emission units.

?? This permit does not impose any emission cap on any of the emissions units.

?? This permit proposes no limits on volatile organic compounds for emissions units 01 and 04 based on 401 KAR 59:225 since the bonding compound meets the exemption requirements of 401 KAR 59:225, Section 6(1)(b).

The permittee shall analyze the bonding product using Method 24 as described in 40 CFR 60, Appendix A to verify that the coating meets the exemption requirements of 401 KAR 59:225, Section 6(1)(b). The Division may approve any alternate procedure for analyzing coatings on a case by case basis. However, any alternate procedure that has not been

previously authorized by EPA shall be submitted to EPA as a SIP revision.

?? The permittee will be required, for emissions units 01 and 04, to assure compliance with the record keeping requirements of 401 KAR 59:225.

?? No regulation applies to emissions units 02 and 04.

CREDIBLE EVIDENCE:

This permit contains provisions, which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has not incorporated these provisions in its air quality regulations.